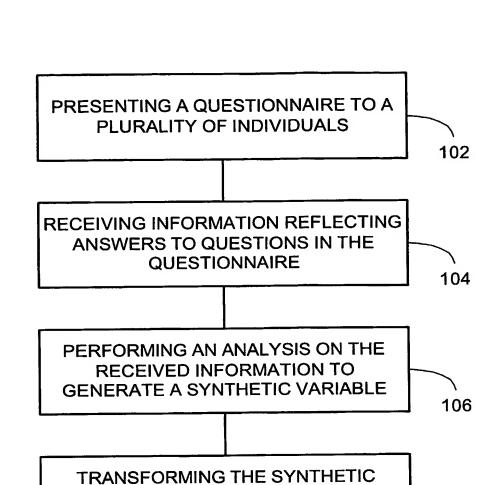
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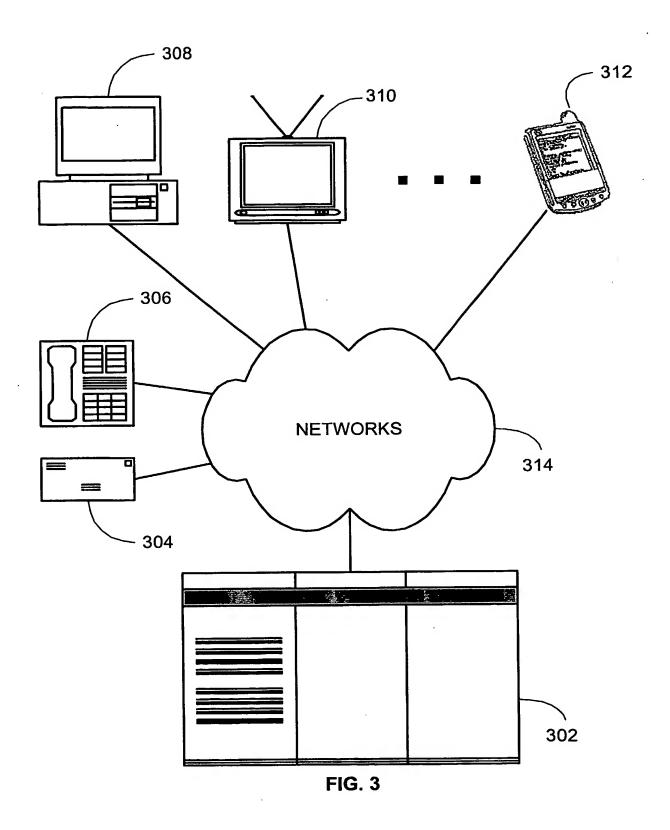
GENERATING A DIAGNOSTIC
ALGORITHM FROM AT LEAST THE
SYNTHETIC VARIABLE USING A TREE
SEGMENTATION TECHNIQUE

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FIG. 1

Ato	<u>oy</u>
1.	Have you ever suffered from eczema or dermatitis?
	□ Yes □ No
2.	Do you suffer from eczema or dermatitis at this moment?
	□ Yes □ No
3.	Did you suffer from eczema or dermatitis as a child?
	□Yes □ No
4.	Have you ever suffered from asthma or hayfever?
••	□ Yes □ No
Son	sitivity
5.	Do you regard yourself as having sensitive facial skin?
J.	□ Yes □ No
6.	Do you consider yourself as having facial skin prone to irritation?
0.	See
-	
7.	Do you consider yourself as having reactive facial skin?
_	☐ Yes ☐ No
	metic Reactivity
8.	Do you avoid certain cosmetics which you feel may cause your facial skin to react?
	□ Yes □ No
9.	Do you consider that your facial skin reacts readily to cosmetics or toiletries?
	□ Yes □ No
10.	Do some cosmetics or toiletry products make your facial skin itch, sting or burn?
	□ Yes □ No
11.	Have you ever experienced an adverse reaction on your face to a cosmetic or toiletry
pro	duct?
•	☐ Yes ☐ No
Env	rironmental Reactivity
	Does the expression "does not tolerate cold weather or a cold environment" apply to
	r facial skin?
,	☐ Yes ☐ No
13	Does the expression "does not tolerate hot weather or a hot environment" apply to your
	al skin?
	□ Yes □ No
11	Does the expression "does not tolerate fast changes in temperature" (e.g. going into a
	m shop from a cold street) apply to your facial skin?
wai	☐ Yes ☐ No
A E	Does going out in the wind cause your facial skin to itch, burn or sting?
15.	
	Yes No
16.	Does going out in the sun cause your facial skin to itch, burn or sting?
	□ Yes □ No
17.	Does your facial skin react* to pollution?
	□ Yes □ No
	cular Reactivity
18.	Does your facial skin react* to alcoholic drinks?
	☐ Yes ☐ No
19.	Does your facial skin react* to spicy food?
	□ Yes □ No
20.	Does your facial skin react* to emotion?
	□Yes □No
*red	Iness . burning sensation, stinging sensation, and/or itching sensation

FIG. 2



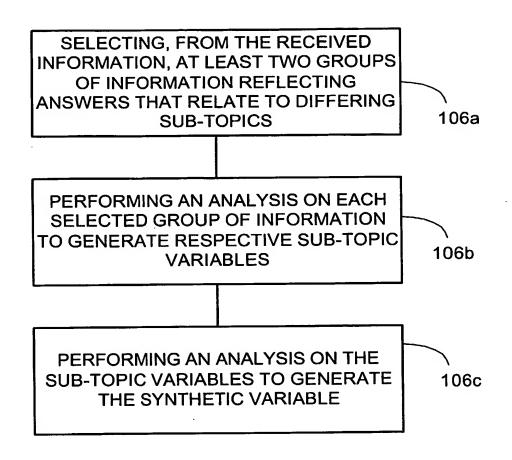
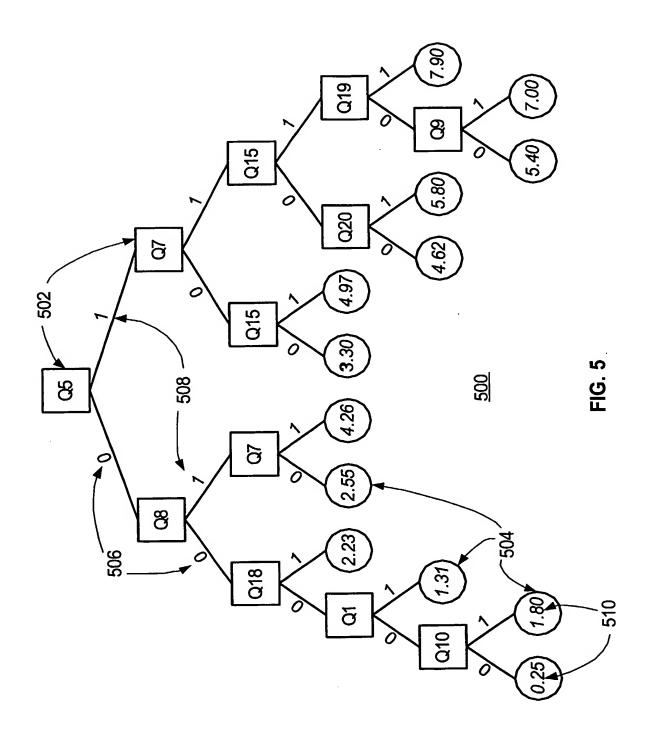


FIG. 4



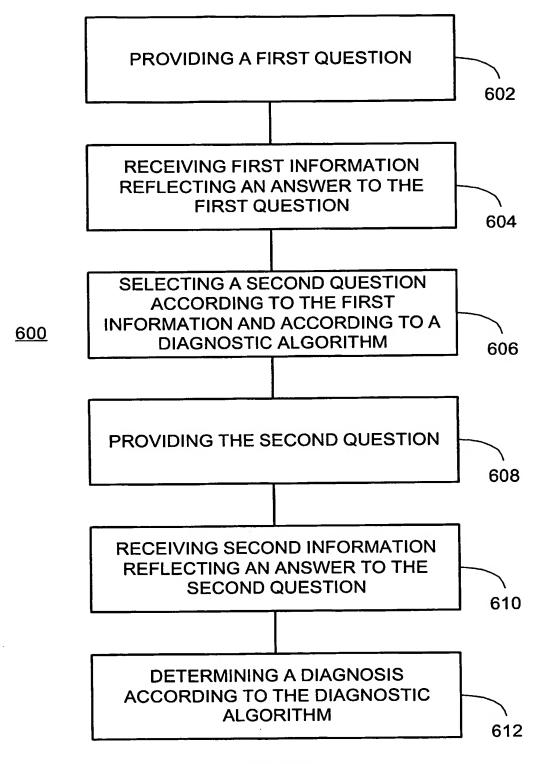


FIG. 6A

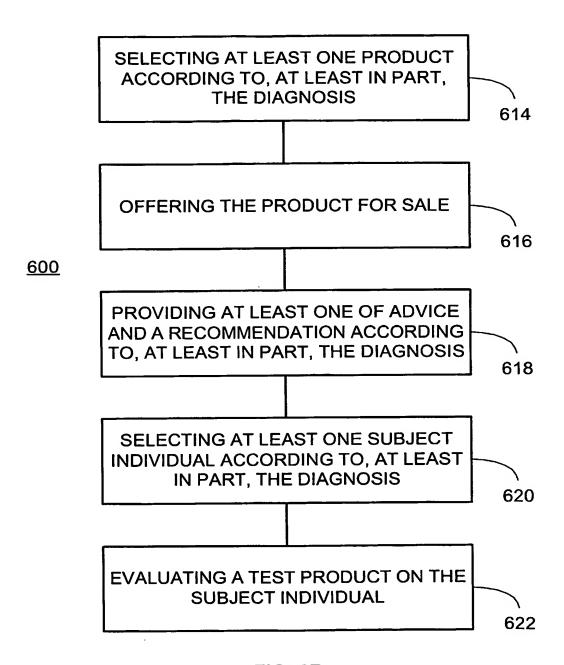


FIG. 6B

Alimited Nicrosoft Internet Explorer	ty Supplies Unlimited Chose your destination Email	you regard yourself as having sensitive facial skin?	Do you consider yourself as having reactive facial skin? ☑ No □ Yes	Does going out in the wind cause your facial skin to itch, burn or sting?	Cream twice a day.	ABC Moisturizing Cream \$9.95	FIG. 7
2 Beauty Supplies Ur Fig. tct. Vet. Favori Figet. → (② ②	nernational Web-Site Beauty Suppli	Do you r	Do you c ⊠ № □	Does goi ⊠ № □ You have	We reco	ABC	a

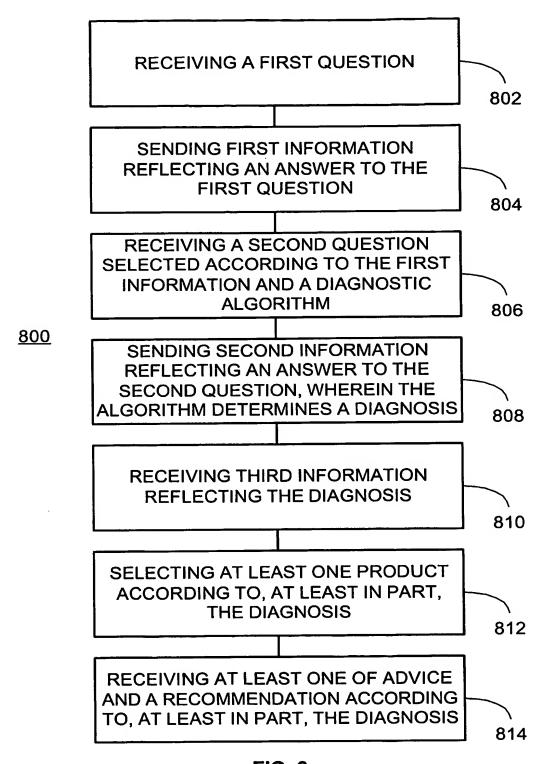
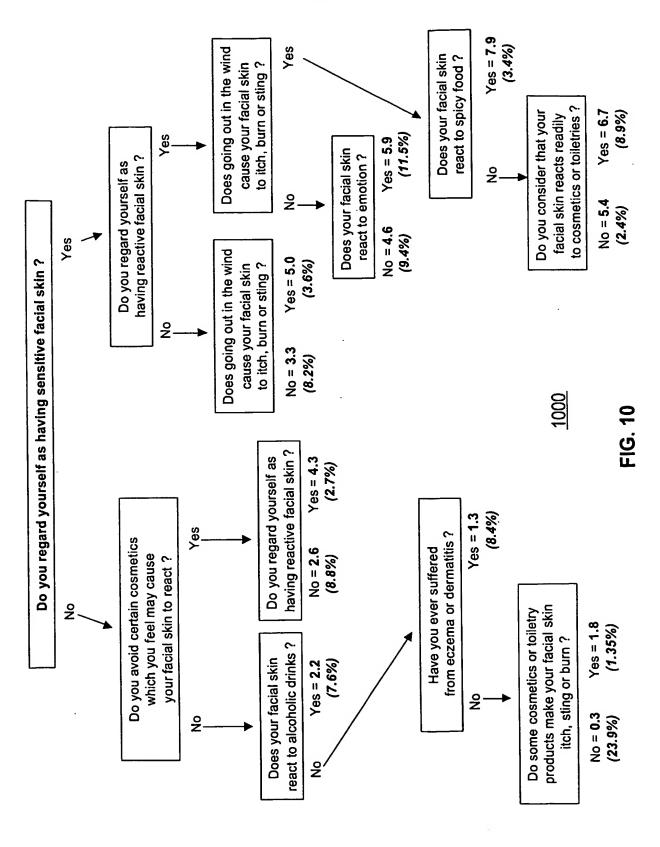


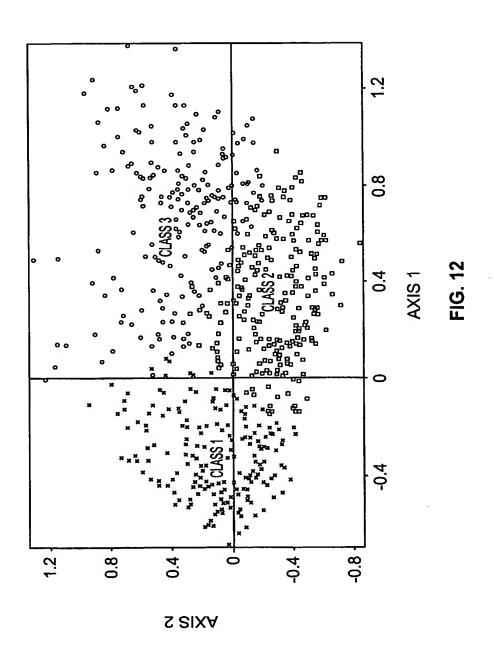
FIG. 8

	Question	Yes
1.	Have you ever suffered from eczema or dermatitis?	40.9%
2.	Do you suffer from eczema or dermatitis at this moment?	13.1%
3.	Did you suffer from eczema or dermatitis as a child?	16.9%
4.	Have you ever suffered from asthma or hayfever?	40.7%
5.	Do you regard yourself as having sensitive facial skin?	47.3%
6.	Do you consider yourself as having facial skin prone to irritation?	34.7%
7.	Do you consider yourself as having reactive facial skin?	38.9%
8.	Do you avoid certain cosmetics which you feel may cause your facial skin to react?	53.3%
9.	Do you consider that your facial skin reacts readily to cosmetics or toiletries?	39.3%
10.	Do some cosmetics or toiletry products make your facial skin itch, sting or burn?	49.5%
11.	Have you ever experienced an adverse reaction on your face to a cosmetic or toiletry product?	47.7%
12.	Does the expression "does not tolerate cold weather or a cold environment" apply to your facial skin?	14.0%
13.	Does the expression "does not tolerate hot weather or a hot environment" apply to your facial skin?	19.4%
14.	Does the expression "does not tolerate fast changes in temperature" (e.g. going into a warm shop from a cold street) apply to your facial skin?	13.1%
15.	Does going out in the wind cause your facial skin to itch, burn or sting?	25.8%
16.	Does going out in the sun cause your facial skin to itch, burn or sting?	28.3%
17.	Does your facial skin react* to pollution?	8.4%
18.		28.7%
19.		12.8%
20.	Does your facial skin react* to emotion?	44.7%

^{*}redness, burning sensation, stinging sensation, and/or itching sensation



	Modality	Population	Population	
		with Self-	with Self-	
		Perceived	Perceived	
		Sensitive Skin	Non-Sensitive	
			Skin	
Reactive facial skin	Yes	75.1	6.4	23.91
Avoid certain cosmetics	Yes	88.6	21.8	22.55
Facial skin prone to irritation	Yes	9.79	5.3	22.16
Cosmetics make skin itch, sting or burn	Yes	82.7	19.7	20.95
Skin reacts readily to cosmetics	Yes	69.0	12.8	19.03
Previous adverse reaction to cosmetics	Yes	75.5	22.8	17.31
Skin reaction to hot environment	Yes	31.0	9.0	9.03
Skin reaction to cold environment	Yes	24.1	4.9	9.05
Skin reaction to wind	Yes	38.6	14.4	8.87
Previous eczema or dermatitis	Yes	55.1	28.2	8.80
Skin reaction to emotion	Yes	58.2	32.7	8.20
Skin reaction to air pollution	Yes	15.5	2.0	8.06
Skin reaction to sun	Yes	39.2	18.5	7.36
Asthma or hav fever	Yes	52.5	30.2	7.25
Eczema or dermatitis as a child	Yes	25.7	9.0	7.18
Reaction to fast changes in temperature	Yes	20.4	6.6	6.57
Skin reaction to alcoholic drinks	Yes	38.0	20.5	6.16
Current eczema or dermatitis	Yes	19.8	7.1	6.00
Skin reaction to spicy foods	Yes	18.8	7.5	5.37



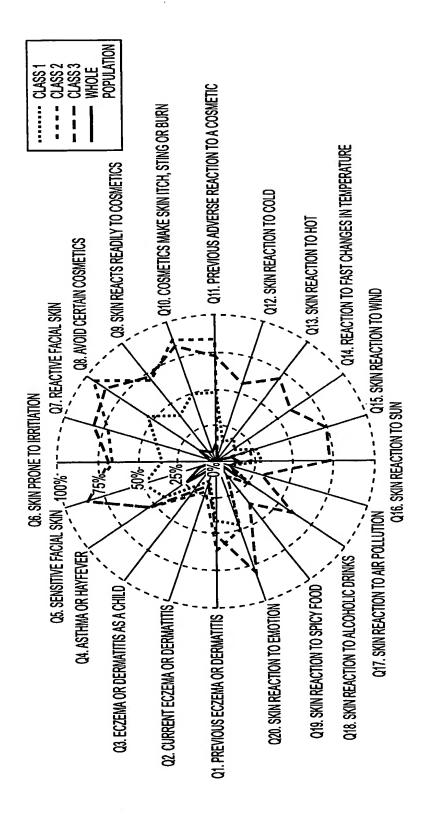


FIG. 13

	Atopy	Sensitivity	Cosmetic Reactivity	Environmental Reactivity	Vascular Reactivity
Q1	0.835	0.290	0.287	0.139	0.081
Q2	0.701	0.207	0.153	0.087	0.057
Q3	0.738	0.229	0.194	0.113	0.040
Q4	0.414	0.241	0.209	0.120	0.029
Q5	0.325	0.893	0.714	0.381	0.262
Q6	0.293	0.864	0.634	0.331	0.230
Q7	0.292	0.887	0.698	0.382	0.279
Q8	0.288	0.707	0.880	0.332	0.229
Q9	0.248	0.644	0.768	0.325	0.227
Q10	0.251	0.691	0.889	0.327	0.273
Q11	0.231	0.560	0.823	0.230	0.233
Q12	0.129	0.299	0.235	0.672	0.204
Q13	0.049	0.299	0.236	0.708	0.298
Q14	0.077	0.239	0.187	0.710	0.311
Q15	0.176	0.299	0.306	0.703	0.256
Q16	0.096	0.246	0.232	0.651	0.230
Q17	0.129	0.250	0.228	0.422	0.204
Q18	0.024	0.220	0.212	0.302	0.847
Q19	0.049	0.184	0.170	0.264	0.755
Q20	0.117	0.283	0.293	0.339	0.735

FIG. 14

	Atopy	Sensitivity	Cosmetic Reactivity	Environmental Reactivity	Vascular Reactivity
Atopy	1.000	0.344	0.302	0.163	0.079
Sensitivity	0.344	1.000	0.744	0.414	0.292
Cosmetic Reactivity	0.302	0.744	1.000	0.361	0.286
Environmental Reactivity	0.163	0.414	0.361	1.000	0.386
Vascular Reactivity	0.079	0.292	0.286	0.386	1.000

FIG. 15

	lr	itial Eigen	Values	Extra	ction Sums Loading	of Squared gs
Component	Total	Percent of Variance	Cumulative Percent	Total	Percent Variance	Cumulative Percent
Component					1	12.22
1 1	2.443	48.852	48.852	2.443	48.852	48.852
2	1.004	20.078	68.930	1.004	20.078	68.930
3	0.732	14.637	83.568			
4	0.600	11.991	95.559			<u></u>
5	0.222	4.441	100.000		<u> </u>	

FIG. 16

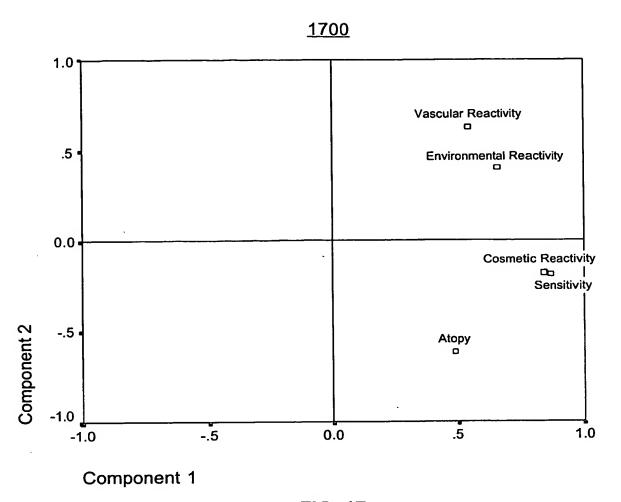
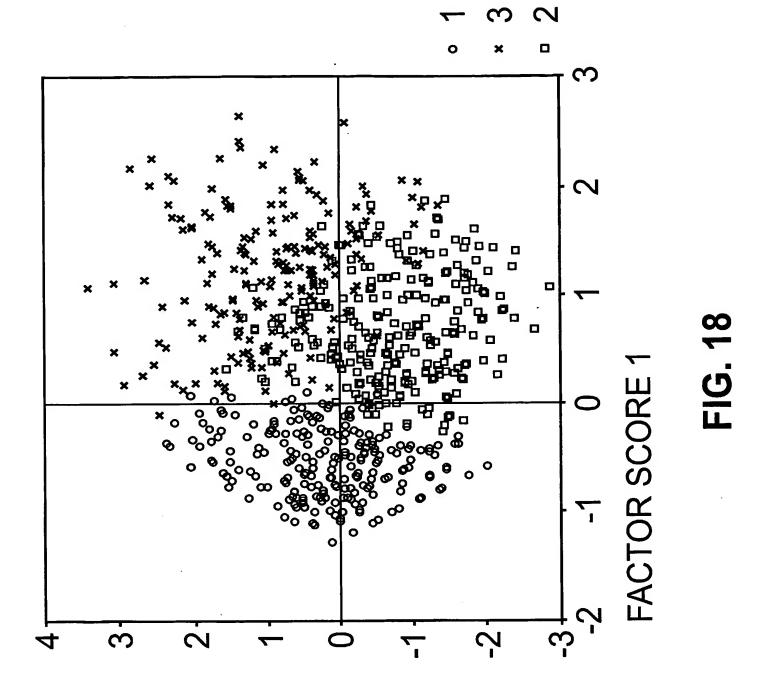


FIG. 17

Class	Frequency	Percent	Valid Percent	Cumulative Percent
Insensitive	470	45.3	45.3	45.3
Slightly Sensitive	266	25.7	25.7	71.0
Averagely Sensitive	247	23.8	23.8	94.8
Very Sensitive	54	5.2	5.2	100.0
Total	1037	100.0	100.0	

FIG. 19



18/23

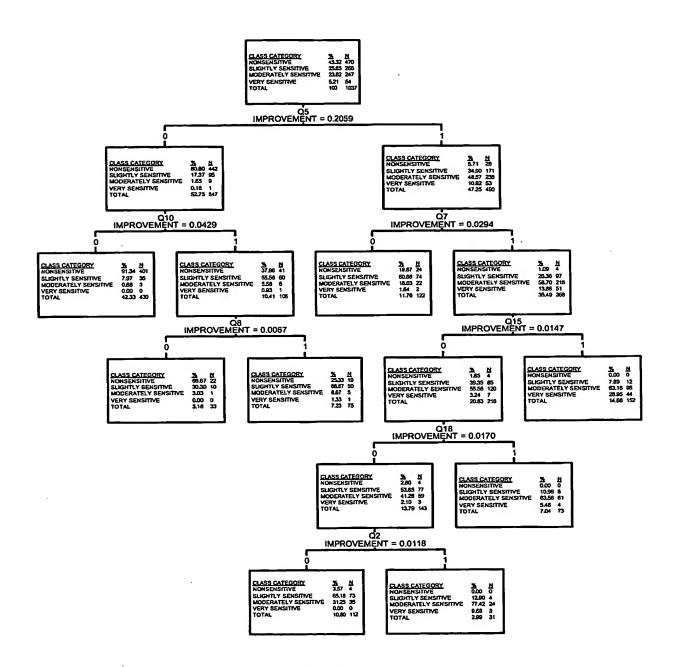


FIG. 20

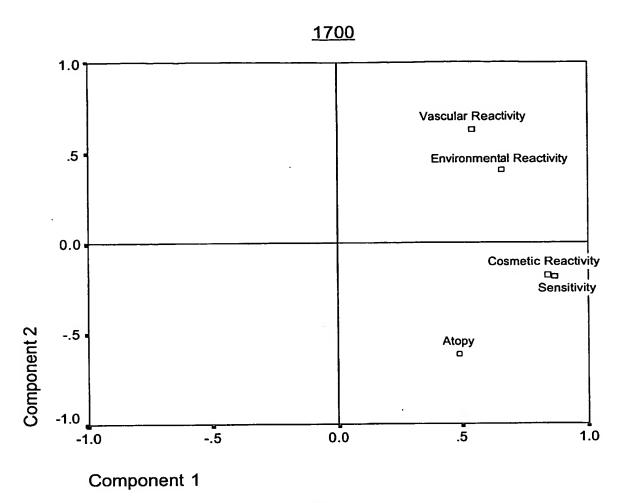


FIG. 17

Class	Frequency	Percent	Valid Percent	Cumulative Percent
Insensitive	470	45.3	45.3	45.3
Slightly Sensitive	266	25.7	25.7	71.0
Averagely Sensitive	247	23.8	23.8	94.8
Very Sensitive	54	5.2	5.2	100.0
Total	1037	100.0	100.0	

FIG. 19



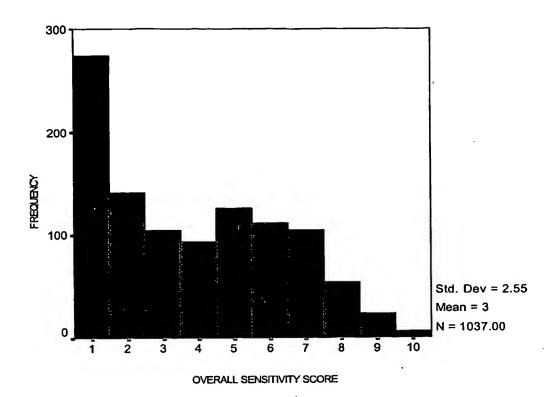
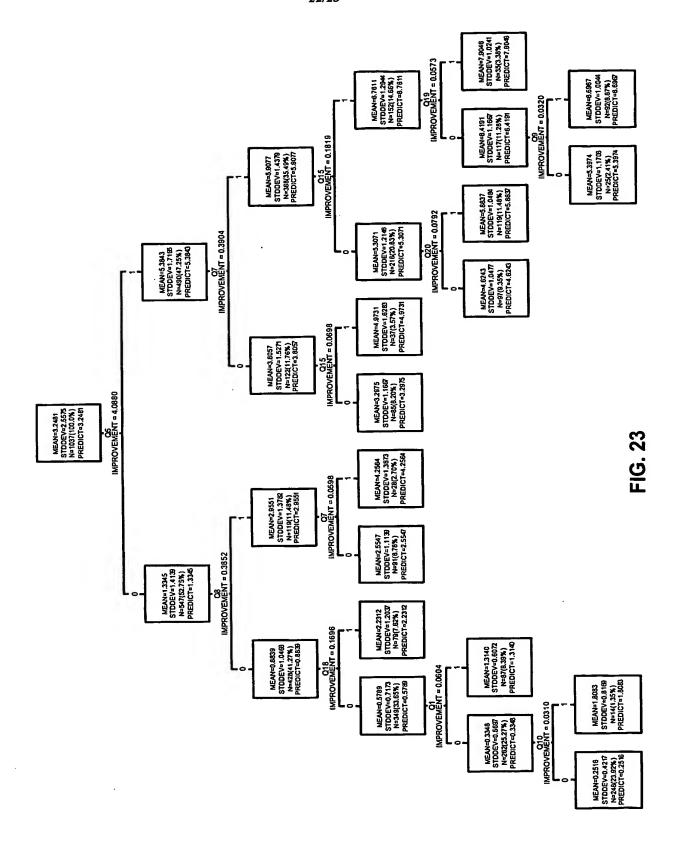


FIG. 21

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	274	26.4	26.4	26.4
1	2	141	13.6	13.6	40.0
İ	3	104	10.0	10.0	50.0
	4	93	9.0	9.0	59.0
	5	126	12.2	12.2	71.2
	6	111	10.7	10.7	81.9
	7	104	10.0	10.0	91.9
	8	54	5.2	5.2	97.1
	9	23	2.2	2.2	99.3
	10	7	.7	.7	100.0
	Total	1037	100.0	100.0	

FIG. 22



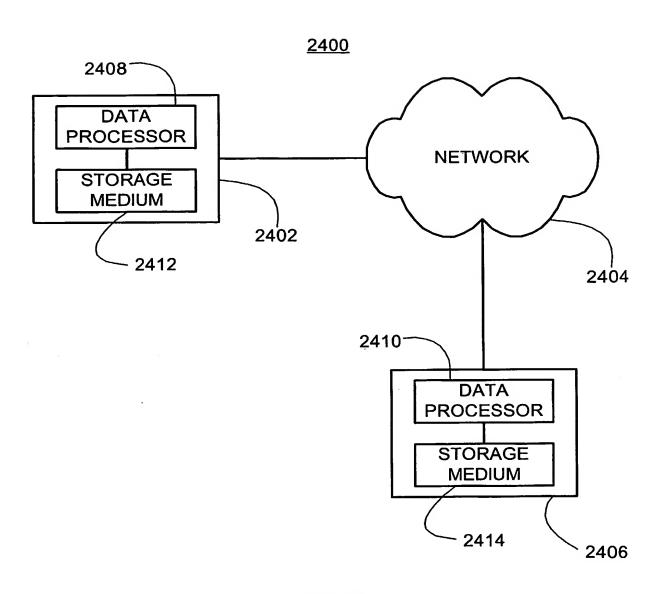


FIG. 24